

ABSTRACT OF THE DISCLOSURE

An architectural arrangement is provided for launching an optical system signal into an optical transport network, where the optical system signal is constituted in a layered membership relationship that defines at least two optical layers. The architectural arrangement includes a multiplexing component connected to an optical transport line residing in the optical transport network and a plurality of signal impairment compensation mechanisms associated with the multiplexing component. The multiplexing component is operable to receive a plurality of optical data signals therein, combine the plurality of optical data signals to form the optical system signal and launch the optical system signal into the optical transport line. The signal impairment compensation mechanisms are operable across each of the optical layers of the optical system signal to perform a signal impairment compensation operation on optical signal therein. The architectural arrangement enables manual routing and optical switching of transit network traffic at each optical layer of a network switching site residing in the optical transport network.